ENERGY POLICY UPDATE

July 22, 2014

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

UPCOMING WEBINARS

- ENERGY STAR Webinars
- U.S. Dept. of Energy Tribal Renewable Energy Webinar Series for 2014
- Better Buildings Challenge: Public-Sector Update
  Thursday, July 24
  12:00 pm - 12:45 pm MST
  Register to attend the webinar.

CONTENTS

The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

ASU Partners with US Virgin Islands on Renewable Energy Projects, Education
[ASU News, July 2] Arizona State University is partnering with the U.S. Virgin Islands to assist in the development of renewable energy practices in the island territory, as well as invigorate the renewable energy market and expand upon energy education. U.S. Virgin Islands Governor John P. de Jongh, Jr. and ASU Provost Robert Page met in June at the ASU Tempe campus to formalize the partnership. The partnership, a product of ASU's dedication to sustainability and global engagement, will unite world-class faculty from ASU with U.S. Virgin Islands leaders in a common mission to transform the way in which renewable energy resources are used in the U.S. Virgin Islands.

Solar Industry Slowing Down in Arizona
[Associated Press, July 13] PHOENIX — After years of rapid growth, Arizona's solar industry appears to be losing some of its heat. Utility regulators are wrestling with how much of a premium to charge energy customers for using solar or other renewable energy sources, the Arizona Republic reported (http://bit.ly/1mZa220) Sunday. For the first time in several years, no large solar plants are being built in Arizona and the number of rooftop-solar installations is down. Experts predict the solar market nationwide to grow by one-third this year, compared to 2013. The Solar Foundation, based in Washington, D.C., reports that 24,000 jobs were added to the field last year. But growth in Arizona and four other states declined somewhat with jobs now being lost. In Arizona, the renewable-energy standard mandates utilities get 15 percent of their energy from solar and other renewables by 2025. That is the lowest standard of the eight most populous Western states. The additional costs related to utilizing alternative energy have been the subject of heated debate among regulators, utility officials and consumers. Utilities such as the Arizona Public Service Co. said they are meeting the mandates to use alternative energy, leading to fewer solar installations.

Tempe Council Moves Forward On Green-Energy Initiative
[Arizona Republic, June 21] Green is good for cities, not only in their coffers but also in their energy use. Tempe hopes to grow greener with a new City Council-approved goal of 20 percent of city property using renewable energy by 2025. That goes beyond the state's renewable-energy standard of 15 percent. "The city of Tempe has long been committed to sustainability," Tempe Mayor Mark Mitchell said. "From being one of the first communities in the Valley with a recycling program to our new grease cooperative that eventually could produce bio fuels, Tempe is at the forefront." Most of the city's energy comes from non-renewable sources, such as coal and gas. To

reach the 20 percent renewable-energy goal, Tempe plans to rely mostly on solar power. In March, the city brought a new solar system online at the South Tempe Water Treatment Plant near Price Road and the Western Canal. This system alone is expected to save the city $2.3 million over 20 years and significantly reduce carbon emissions.

UA-Developed STEM Curriculum Hits Homerun with Science of Sport Startup

Middle School Program Started as AZ Diamondbacks Partnership Now Available to Teams and Communities World-wide

[U of A - Tech Launch Arizona, July 16] Tucson, AZ – In 2012, University of Arizona, through engineering associate professor Ricardo Valerdi, partnered with the Arizona Diamondbacks to create The Science of Baseball, an academic curriculum for middle school students that promotes real-world applications of science, technology, engineering and math principles (STEM). To date, the program has reached 100 Arizona schools and 2,000 students across the state. Now, with the goal of rapidly expanding the reach of the innovative curriculum, the University of Arizona has licensed the rights to the innovative STEM curriculum to Science of Sport, a new company founded by Valerdi, former UA Medical Center Director of Community Relations Crystal Kasnoff, and former San Diego Padres President/CEO Ballard Smith. Tech Launch Arizona, the unit of the UA that helps faculty members commercialize inventions arising out of their research, facilitated the formation of the new company and the licensing of the intellectual property. While the Arizona Diamondbacks maintain the rights to distribute the curriculum within the state, the new company aims to deliver the innovative teaching and learning materials via professional sports teams across the nation, and potentially to young sports fans around the world. “Step one is to be in 30 major league baseball cities and be in every middle school in each market,” says Smith. “Those 30 teams combined have 100 minor league teams in 100 other cities.” Beyond the US, they have already run Science of Baseball camps in Australia and are targeting Mexico in 2015, according to Valerdi.

Tesla Opens Latest Supercharger Station in Wickenburg

[Phoenix Business Journal, July 15] Tesla Motors Inc. has opened one of its Supercharger stations in Wickenburg. The California-based maker of electric vehicles placed the charging station along U.S. Route 93 to support trips between Phoenix and Las Vegas. Tesla's Supercharger stations allow owners of its vehicles to recharge during long trips. They provide up to 120 kilowatts of power and can replenish half of a Model S battery in 20 minutes. Stations are strategically placed in various spots around the country to allow drivers to go from station to station with minimal stops.

ALTERNATIVE ENERGY & EFFICIENCY

DOE Announces Funding Opportunity for Energy Efficiency Projects on Tribal Lands

[Energy Manager Today, July 18] The US Department of Energy (DOE) announced up to $7 million to deploy clean energy and energy efficiency projects in tribal communities. The Tribal Energy Program, in cooperation with the Department’s Office of Indian Energy, will help Native American tribes, tribal energy resource development organizations and tribal consortia to install community or facility-scale clean energy and energy efficiency projects. Tribal lands comprise nearly 2 percent of US land, but contain about 5 percent of all the country’s renewable energy resources. With more than 9 million MW of potential installed renewable energy capacity on tribal lands, these communities are well positioned to capitalize on their abundant domestic renewable energy resources, enhancing US energy security.

First Solar Abandons Plans for World’s Biggest Solar PV Plant in China

It was a huge announcement that never really went anywhere, according to the company.

[Renewable Energy World, July14] New York – First Solar Inc. won’t be building the world’s largest solar plant in China after more than four years of negotiations on pricing failed to produce an agreement. First Solar had planned to build the 2,000-megawatt Ordos project in Inner Mongolia and sell the output to China’s power grid. Terms for selling the power were never agreed to, said Steve Krum, a spokesman for Tempe, Arizona-based First Solar. “Due to the market environment, we aren’t going to pursue the Ordos project further,” Krum said today in an interview. The plant was never included in the company’s pipeline of contracted projects, he said.

Renewables Provide 56 Percent of New US Electrical Generating Capacity in First Half of 2014

[Renewable Energy World, July 21] Washington, D.C. – According to the latest "Energy Infrastructure Update" report from the Federal Energy Regulatory Commission's Office of Energy Projects, solar, wind, biomass, geothermal, and hydropower provided 55.7 percent of new installed U.S. electrical generating capacity during the first half of 2014 (1,965 MW of the 3,529

MW total installed). Solar alone has accounted for nearly a third of new U.S. generating capacity thus far in 2014: 32.1 percent (1,131 MW). Wind provided 19.8 percent (699 MW), followed by biomass (2.5 percent – 87 MW), geothermal (0.9 percent – 32 MW), and hydropower (0.5 percent – 16 MW). Most of the balance (1,555 MW – 44.1 percent) of the new generating capacity was provided by natural gas while no new coal or nuclear power capacity was reported. The dominant role being played by renewables in providing new electrical generating capacity in 2014 is continuing a trend now several years in the making. Over the past 30 months (i.e., since January 1, 2012), renewable energy sources have accounted for almost half (48.0 percent) or 22,774 MW of the 47,446 MW of new electrical generating capacity.

US Could Get 12% of Electricity from Municipal Waste

[SustainableBusiness.com News, July 17] We're not crazy about incinerators, but if we sent our waste there instead of to landfills, the US could get 12% of its electricity from waste and heat tens of millions of homes and businesses, according to Columbia University's Earth Engineering Center. Doing that would keep 123 million tons of greenhouse gas emissions from entering the atmosphere each year, they say, and would reduce the use of coal by about 100 million tons a year. And rather than sending plastic that's not recyclable to the dump, it should be converted to oil - to provide an annual 6 billion gallons of gasoline. Going further, exhaust from waste-to-energy plants should be used for district heating, commonly done in Norway, Denmark, Sweden and Germany. Anything that can be recycled or composted is removed before going through the process. "Many developed nations are further along in embracing and expanding their use of energy recovery technologies as a vital part of their sustainable resource management systems. This presents an important opportunity for city planners and policy makers in the United States," says Nick Themelis, director of the Earth Engineering Center. Connecticut, Maine, Massachusetts, Minnesota and New Hampshire, in that order, are closest to attaining sustainable waste management, by combining high rates of recycling with high waste-to energy.

US Should Learn from Germany's Renewable Energy…Mistakes?

A new report finds that Germany has made costly mistakes in its transition to renewable energy, and suggests that the US should heed warnings when developing its own energy future. [Renewable Energy World, July 16] New Hampshire, USA – While Germany is often lauded for its Energiewende, a new report released by Zurich-based Finadvice for the Edison Electric Institute explains the consequences of its transition, which include high electricity prices, subsidy debts, grid instability, and costly grid upgrades. "American consumers and policymakers should be aware that the challenges for the energy system increase with fast growth and high shares of renewables," said Felix ab Egg, managing director at Finadvice. "A number of factors must be considered to ensure a transition to renewable energy as part of a broader energy strategy that does not impact the reliability of the electric grid or the stability of pricing for electricity users." The German government established a feed-in tariff (FIT) incentive system, which guarantees long-term fixed tariffs per unit of renewable power produced. The FIT is decreased in stages as the cost of technology decreases. According to the report, Germany underestimated the ultimate cost of the FIT, which to date is $412 billion, including guaranteed and grated rates that have not yet been paid. By 2022, the estimated cost of the FIT program will reach $884 billion, according to German Minister of the Environment Peter Altmaier, and the country will pay $31.1 billion in 2014 alone. Though the FIT program has succeeded in bringing a large amount of renewables onto the grid in a short amount of time, the report states that consumers have suffered as a result. Electricity prices in Germany have doubled from $.18/kWh in 2000 to $.38/kWh in 2013.

Without Much Straining, Minnesota Reins In Its Utilities' Carbon Emissions

[New York Times, July 17] MINNEAPOLIS — When city leaders and state legislators agreed last year to fund roughly half the $1 billion cost of a new stadium for the Minnesota Vikings, they attached the usual strings for such projects: It had to be architecturally iconic, employ steel made from Minnesota iron ore and offer at least a few cheap seats. It also had to be energy efficient, from lighting to building materials to the sources of its power. In this state, that is not unusual. Minnesota has mandated sharp reductions in energy use in every new state-financed building for more than a decade, and in renovated buildings for more than five years. While other states and critics of the Obama administration have howled about complying with its proposed rule slashing greenhouse gas emissions from power plants, Minnesota has been reining in its utilities' carbon pollution for decades — not painlessly, but without breaking much of a sweat, either. Today, Minnesota gets more of its power from wind than all but four other states, and the amount of coal burned at power plants has dropped by more than a third from its 2003 peak. And while electricity consumption per person has been slowly falling nationwide for the last five years, Minnesota's decline is steeper than the average. The Obama administration's proposal would reduce power plants' carbon pollution 30 percent from 2005 levels by 2030. Minnesota set similar nonbinding goals for its entire economy seven years ago: a 15 percent reduction by 2015, 25 percent by 2025

and 80 percent by 2050. (Minnesota measures carbon differently; by federal standards, its reductions would most likely be greater.)

ENERGY/GENERAL

Mexico's CFE To Tender $2.8 Bln in Power Plant, Pipeline Projects

[Reuters, July 21] MEXICO CITY – Mexico's national power company CFE said on Monday it will offer $2.8 billion in natural gas and electricity infrastructure project contracts by the end of this year aimed at boosting economic growth. The projects include two combined-cycle power plants, two natural gas pipelines as well as an electricity transmission project, all located near Mexico's northern border with the United States. The scheme is designed to boost natural gas imports from the U.S. and over time help lower electricity rates via cheaper inputs and more modern power infrastructure. Companies including IEnova, the Mexican unit of U.S. energy firm Sempra Energy, South Korea's KEPCO and France's GDF Suez are widely expected to compete for the contracts. CFE Chief Executive Enrique Ochoa said the contracts will be open to private firms in international public tenders and the projects are expected to enter into operation by 2017.

Natural Gas, Renewables To Lead New Capacity Additions through 2040

[Power Engineering, July 16] The reference case for the Energy Information Administration (EIA)'s Annual Energy Outlook 2014 predicts 351-GW of new electric generating capacity between 2013 and 2040 in the electric power and end-use sectors. Natural gas is the primary fuel source of the predicted added capacity, accounting for 73 percent, or 255-GW, of capacity additions. Renewables will count for 24 percent; 3 percent for nuclear and 1 percent for coal, the report said. Of the 83-GW projected for renewables, 39-GW are solar photovoltaic systems and 28-GW are wind, with a majority to occur by 2015 to take advantage of production tax credits. Nuclear additions total 10-GW, including 6-GW currently under construction and 4-GW projected after 2027. Near-term additions through 2016 average 16-GW per year, then additions of less than 9-GW per year through 2022 since the existing generating fleet will be sufficient to meet expected demand growth in most regions, the report said. Between 2025 and 2040, annual additions increase an average of 14-GW each year, but remain below recent levels.

INDUSTRIES AND TECHNOLOGIES

After Hybrid Success, Toyota Gambles on Fuel Cell

[Associated Press, July 17] TOKYO — Rocket science long dismissed as too impractical and expensive for everyday cars is getting a push into the mainstream by Toyota, the world's top-selling automaker. Buoyed by its success with electric-gasoline hybrid vehicles, Toyota is betting that drivers will embrace hydrogen fuel cells, an even cleaner technology that runs on the energy created by an electrochemical reaction when oxygen in the air combines with hydrogen stored as fuel. Unlike internal combustion engines which power most vehicles on roads today, a pure hydrogen fuel cell emits no exhaust, only some heat and a trickle of pure water. Fuel cells also boast greater efficiency than the internal combustion process, which expends about two-thirds of the energy in gasoline as heat. Toyota's fuel cell car will go on sale before April next year. Despite advantages that are seemingly compelling, the technology has struggled to move beyond its prototypes after several decades of research and development by industry and backing from governments. For the auto industry in particular, there have been significant hurdles to commercialization including the prohibitive expense of such vehicles. On top of that, fueling stations are almost nonexistent. Doubters also quibble about the green credentials of fuel cells because hydrogen is produced from fossil fuels.

Automotive Market on Track To Be Biggest User of Energy Storage

[Energy Manager Today, July 16] The automotive market is on its way to displacing consumer electronics as the biggest user of energy storage, according to a new report from Lux Research, "Finding Growth Opportunities in the $50 Billion Energy Storage Market." Energy storage will grow at a compound annual growth rate (CAGR) of 8 percent to $50 billion in 2020, Lux reports. Transportation applications will outpace electronics growth—attaining an 11 percent CAGR to become a $21 billion market by the end of the decade. Its faster growth will close the gap with electronics, which will remain the single largest market valued at $27 billion. The market for stationary applications will be worth $2.8 billion. Additionally, incremental evolutions like start-stop technology are leading to significant changes in the energy storage market. With global sales of 59 million, a 53 percent market share and $6.1 billion in annual revenue, micro-hybrids will overtake the conventional internal combustion engine and emerge the most popular drivetrain by 2020.

Construction Begins on World's Largest Carbon Capture Project

[Daily Fusion, July 17] The Department of Energy—in partnership with NRG Energy Inc. and JX Nippon—announced that construction has begun on the first commercial-scale post-combustion carbon capture retrofit project in the U.S., the largest such project in the world. The Petra Nova Project will use this cutting edge technology to help decrease the power plant's greenhouse gas emissions. Once completed, the carbon capture retrofit project will capture about 1.4 million metric tons of carbon dioxide (CO_2) annually from an existing coal-fired power plant in Texas. The captured CO_2 will then be used to extract additional, hard-to-access oil from a previously depleted field 80 miles away, safely storing the carbon underground in the process. "As part of the President's all-of-the-above approach to American energy, the Department is advancing the technologies that will help ensure we can continue to develop all of our abundant energy resources responsibly and sustainably," said Secretary Ernest Moniz. "With coal expected to remain a significant part of the energy portfolio in the U.S. and internationally, first-of-a-kind projects like Petra Nova will move us toward a low-carbon energy future." Originally conceived as a 60 megawatt (MW) capture project for which they received $167 million in support from the Department, the project sponsors expanded the design to capture emissions from 240 MW of generation at the Houston-area power plant, quadrupling the size of the capture project without additional federal investment.

DOE Announces Microgrid Competition To Support Community Resiliency

[NASEO website, July 16] The U.S. Department of Energy (DOE) recently announced the Microgrid 2014 MVP Challenge, a competition to support resiliency and adaptation in communities across the nation. Under this Challenge, organizations with operational microgrids are encouraged to submit details about their microgrid designs and operational data for judging. The operational data will help the Department learn more about the performance and value of microgrids and capture practical information that can be shared about how microgrids are being used to make communities more resilient. As part of the Obama Administration's Climate Action Plan, the competition advances the President's commitment to helping the nation prepare for the impacts of climate change. The deadline for applying is August 29, 2014.

Thermoelectric Material To Hit Market Later This Year

A California-based company is commercializing an abundant, naturally occurring material that can turn waste heat into power.

[MIT Tech Review, July 15] California-based Alphabet Energy plans to begin selling a new type of material that can turn heat into electricity. Unlike previous thermoelectrics, as such materials are known, it is abundant, cheap, and nontoxic. Thermoelectric materials can turn a temperature difference into electricity by exploiting the flow of electrons from a warmer area to a cooler one. Thus, they can theoretically turn waste heat into a power source. But an efficient thermoelectric material has to conduct electricity well without conducting heat well, because otherwise the temperature across the material would soon equalize. Most materials that are good electrical conductors are also good thermal conductors, and the few materials researchers have been able to develop with good thermoelectric properties have been rare, expensive, or toxic. Alphabet Energy's solution is tetrahedrite: an abundant, naturally occurring mineral that also happens to be more efficient on average than existing thermoelectric materials.

USU Team Looking To Charge Electric Vehicles While On The Go

[CaheValleyDaily.com, July 17] LOGAN – Imagine being able to skip the gas station and inexpensively fuel your vehicle as you drive. A team of Utah State University researchers is trying to make that a reality by looking into the viability of installing transmitting coils beneath roadways that will wirelessly charge cars as they travel. Last year, that same team of researchers developed a way to wirelessly charge stationary electric vehicles. The technology they developed enabled the vehicles to be charged while parked over a charging station. That technology could be very useful for driving short distances around town, or for public transit buses that would be charged every time they pull into a bus stop, but for vehicles that travel long distances, it isn't as convenient. According to Regan Zane, one of the main researchers involved in the project, electric cars today have less than .1 percent market penetration countrywide. A significant factor in that is what Zane called range anxiety, worrying your vehicle won't be able to reach your destination before it runs out of energy. Some electric cars can't go more than 100 miles on a single charge. "I can't even really get to the airport from here reliably on a charge," Zane said. "So that's really the challenge. Whether I can charge it in my garage or not, the trouble is I just can't get it as far as I need to go." Zane said with current technology, if electric cars were to increase their range to the point of eliminating range anxiety, it would mean having unreasonably large and prohibitively expensive batteries. "We've got find a way to hold less energy in the car and somehow transfer energy as we are going along the trip," he said. Because of the challenges associated with this project, construction is scheduled to begin sometime in August on a new facility that features an oval

roadway and other technologies to help solve the major technical issues.

LEGISLATION AND REGULATION

Dead Air: End of Tax Credit Deflates Wind Power

The end of a federal subsidy for wind power production has had a drastic effect.

[USNews.com, July 17] It's in the doldrums. If there was any question about whether and how the wind industry would be affected by the absence of a federal tax credit, the evidence is here. While more than 12,000 megawatts' worth of new wind power was installed in 2012, fewer than 2,000 new megawatts were just a year later. The reason: Investors rightly predicted the production tax credit would not be renewed by Congress before it expired after last year, according to data from the Union of Concerned Scientists and the American Wind Energy Association. "What you're seeing … is the uncertainty over this production tax credit. It's night and day, an on-off switch," says Dan Kammen, a professor of energy at the University of California–Berkeley. "In terms of the projects getting the go-ahead, it totally changes the financing needs, the revenue of the project." C. Arden Pope, an economist at Brigham Young University, agrees. "This is a stunner," he says. "On the margin, it suggests that these production tax credits play a very, very big role in the viability of these turbines." The tax credit, originally enacted in 1992, in its most recent form gave turbine owners 2.3 cents for every kilowatt-hour of power their windmills produced and applied also to wind power construction. It sounds small, but the credit added up. It not only eased the intense upfront costs of constructing high-tech turbines, but also often made the difference when wind was compared to competitors in the solar, coal, and oil and gas sectors – all of which still receive tax breaks and other incentives. Oil, gas and coal, for example, received more than $21 billion in state and federal subsidies last year, according to a new report by Oil Change International, an environmental advocacy group.

Whirlpool Wants Congress To Ban Class-Action Suits Tied to Energy Star Program

[New York Times, July 20] After government testing showed that scores of consumer products carrying the Energy Star label did not deserve the listing, a wave of class-action lawsuits was filed against the companies that manufacture the products. Now, at least one major manufacturer wants Congress to ban the lawsuits and is threatening to withdraw from Energy Star, an Environmental Protection Agency program, unless it gets its way. But consumer advocates say such lawsuits are a healthy form of enforcement. A bill introduced by Representative Robert Latta, a Republican whose Ohio district is home to several Whirlpool factories, would prohibit class-action lawsuits if the E.P.A. came up with a remedy, like reimbursing consumers, for products that did not live up to their billing. The bill is co-sponsored by Representative Peter Welch, Democrat of Vermont, who is honorary co-chairman of a Washington group, the Alliance to Save Energy, which is also backing the change. LG Electronics is a founding member of the group, and Whirlpool is an associate member. The proposed legislation drew immediate opposition from trial lawyers, who say the courts are often the only redress consumers have. "By eliminating consumers' access to the civil justice system, corporations will not be held accountable in court for swindling customers," said Sarah Jones, a spokeswoman for the trial lawyers' organization, the American Association for Justice. Whirlpool did not comment and referred questions to the appliance industry's trade association, the Association of Home Appliance Manufacturers, which said, "E.P.A. already has sufficient authority to protect consumers and make the determination of whether compensation is appropriate."

White House Opens Door To Exploring Atlantic for Oil

[New York Times, July 18] The Obama administration approved guidelines on Friday for seismic searches for oil and gas deposits in the Atlantic Ocean, handing the petroleum industry a significant victory in a bitter dispute with environmental groups over the searches' impact on marine life. The decision opens the way for companies to seek permits to look for oil in a stretch of the Atlantic from Delaware to Florida, using compressed-air guns that blast the ocean bottom with thousands of sound pulses as loud as a howitzer. The pulses bounce off geologic formations deep in the earth, giving geologists hints of where oil and gas deposits may lie. The new rules do not permit actual drilling for oil, and the only previous exploration in the area produced 51 dry holes before ending in the 1980s. But experts have said that a decision to allow exploration sends a clear signal that allowing offshore drilling rigs would be approved as well. A congressional ban on offshore Atlantic production expires in 2017. The oil industry is pressing for exploration to begin as soon as next year. The Interior Department, which issued the new guidelines, has said that as much as 4.7 billion barrels of recoverable oil could lie beneath the seabed, but the lack of actual exploration data puts that estimate in doubt.

WESTERN POWER

Drought Hinders California's Clean Energy Goals

[Associated Press, July 20] SAN FRANCISCO — Already locked in its third dry year, an ongoing drought could complicate California's battle against global warming and make it more expensive, officials said. For years, dams have been one of California's main sources of clean energy, generating power without spewing greenhouse gases into the air. The San Francisco Chronicle reported Sunday (http://bit.ly/1qTT5Ej) that many energy-generating reservoirs are low today, and future dry years could slash the amount of power flowing from the state's hydroelectric dams, putting higher demands on less clean and costlier sources. Less water forces power companies to buy energy from conventional plants that burn natural gas. "If there's less hydro, the power has to come from somewhere," said Victor Niemeyer of the Electric Power Research Institute. "You have to burn more gas, and that costs more money, all things considered." California has made strides to fight global warming, as the state pushes utility companies to obtain 33 percent of their electricity from renewable sources by 2020. That includes wind and solar power. California's emission levels peaked in 2004, but they fell steadily from 2007 to 2011, California Air Resources Board records show. At the drought's onset, emission levels again started to rise, and dry conditions were a factor. Pacific Gas & Electric operates one of the nation's largest private fleet of hydroelectric dams, with more than 100 reservoirs that feed into 68 generating stations. The drought has left some of the utility's reservoirs in the southern Sierra Nevada at half of their capacity.

From the Lab to the Field: Washington Invests in Battery Technology Pilots

[Energy Prospects West, July 22] A trio of Washington utilities this month received the first investments from the state's new Clean Energy Fund to help pay for field-testing battery storage technologies and integration software. Puget Sound Energy, Avista and Snohomish County PUD were awarded a total of $14 million in matching grants from the state's new $40-million fund, which was created in the last legislative session to help expand Washington's clean energy economy. The total cost of three smart grid demonstration projects comes to $35.3 million, with the state's $14 million investment adding to $21 million in utility and federal funds. Gov. Jay Inslee, who championed the Clean Energy Fund and has been a proponent of developing battery technologies since his days in Congress, announced the awards on July 8 at UniEnergy Technology's headquarters in Mukilteo, Wash. California jump-started the market for energy storage technologies last October when the California PUC mandated that state IOUs acquire 1.3 gigawatts of storage capacity by 2020, now Washington state is helping state utilities and battery storage companies to refine storage technology and control technology software.

Nevada Ratepayers Without Solar PV Benefit from Net-Energy Metering

[Energy Prospects West, July 22] Net-energy metering is becoming a power-rate benefit for Nevada utility customers who do not generate any of their own power, according to a July 3 study released by the consulting firm Energy and Environmental Economics. "Prior to 2014, there was a significant cost shift from NEM customers to non-participating customers primarily because the funding of [NV Energy's] RenewableGenerations Incentive was relatively large and impacted the bills of all customers," E3 concluded. In 2014 and 2015, however, non-participants will enjoy lower rates, because the Public Utilities Commission of Nevada has reduced incentives for customer self-generation and because of the 2.45 renewables portfolio energy credits NV Energy continues to receive for each 1 kWh of solar distributed generation, E3 predicted. The 2.45 multiplier enables NV Energy to reduce the amount of utility-scale generation needed to satisfy Nevada's renewables portfolio standard. The Nevada RPS requires the utility to obtain 25 percent of its retail sales from renewables by 2025. The multiplier goes away in 2016, but in the meantime NV Energy has been able to save portfolio energy credits to use in meeting the RPS in future years.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

INCENTIVES

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- Job Training
- Quality Jobs
- Qualified Facility
- Computer Data Center Program
- Research & Development
- Foreign Trade Zone
- Military Reuse Zone
- Angel Investment
- Renewable Energy Tax Incentive
- Healthy Forest
- Sales Tax Exemption for Machinery and Equipment
- Lease Excise
- Additional Depreciation
- Work Opportunity
- Commercial/Industrial Solar
- SBIR/STTR
- Private Activity Bonds
- QECB's

(ACA) PROGRAMS

DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News

  DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- Tribal Energy and Mineral Development Grants - Response due Aug. 25, 2014
- Hydrogen Fuel Cell Technologies Incubator - Response due Sep. 3, 2014
- Manufacturing Machines and Equipment - Response due Sep. 15, 2014
- Secure and Trustworthy Cyberspace - Response due Sep. 19, 2014
- Nanomanufacturing – Current Closing Date for Applications: Sep. 15, 2014 Full Proposal Window: Sep.1, 2014 – Sep. 15, 2014 Full Proposal Window: Feb. 01, 2015 – Feb. 17, 2015
- Civil Infrastructure Systems – Sep. 15, 2014 Submission Window Date(s) (due by 5 p.m. proposer's local time): Full Proposal Window: Sep. 01, 2014 – Sep. 15, 2014 Full Proposal Window: Feb. 01, 2015 – Feb. 17, 2015
- Energy for Sustainability – Current Closing Date for Applications: Nov. 5, 2014 Full Proposal Window: Oct. 01, 2014 – Nov. 5, 2014
- Energy, Power, and Adaptive Systems - Close Date: Nov. 3, 2014
- National Robotics Initiative - Response due Nov. 14, 2014
- NSF/DOE Partnership on Advanced Frontiers in Renewable Hydrogen Fuel Production Via Solar Water Splitting Technologies 2014-2016 - Close Date: Dec. 11, 2014

- Energy for Sustainability – Current Closing Date for Applications: Nov. 5, 2014
- Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303 Expiration Date: Nov. 30, 2016
- Repowering Assistance Program - Ongoing
- Rural Business Enterprise Grants - Ongoing
- Rural Business Opportunity Grants - Ongoing
- Sustainable Agriculture Research and Education Grants - Ongoing
- Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines
- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Green Refinance Plus - Ongoing

ENERGY-RELATED EVENTS

2014

- Biomass 2014: Growing The Future Bioeconomy
  July 29-30, 2014 Washington, DC

- DOE Commercial-Scale Tribal Renewable Energy Project Dev. & Finance Workshop
  July 29-31, 2014 Golden, CO

- National Geothermal Summit
  August 5-6, 2014 Reno, NV

- Microgrid Development for Public & Private Sectors
  August 12-14, 2014 San Diego, CA

- Energy 101
  August 13 Litchfield Park, AZ

- Innovation Arizona Summit
  August 14 Scottsdale, AZ

- 2014 Environmental & Sustainability Summit
  August 14, Prescott, AZ

- SBIR: Ask the Experts
  August 20 Tucson, AZ

- SBIR: Ask the Experts
  August 21 Phoenix, AZ

- 2014 ACEEE Summer Study on Energy Efficiency in Buildings
  August 17-22, 2014 Pacific Grove, CA

- 2014 Farm Progress Show
  August 26-28, 2014 Boone, IA

- Symposium on Thermal & Catalytic Sciences for Biofuels & Biobased Products
  September 2-5, 2014 Denver, CO

- EPI's 4th Annual Energy Policy Research Conference
  September 4-5, 2014 San Francisco, CA

- Arizona Technology Summit
  Sept. 17 Phoenix, AZ

- HTUF 2014 National Meeting - The Forum for Action in High-Efficiency Commercial Vehicles
  September 22-24, 2014 Argonne, National Lab - Argonne, IL

- Geothermal Energy Expo
  September 28-October 1, 2014 Portland, OR
- AWEA Offshore Windpower Conference & Exhibition 2014
  October 7-8, 2014 Atlantic City, NJ
- Solar Power International
  October 20-23, 2014 Las Vegas, NV
- GreenBuild International Conference & Expo
  October 22-24, 2014 New Orleans, LA
- World Bio Markets USA
  October 27-29, 2014 San Diego, CA
- VERGE SF 2014
  October 27-30, 2014 San Francisco, CA
- Governor's Celebration of Innovation
  November 13, 2014 Phoenix, AZ
- Solar Power Generation USA 2015
  February 4-5, 2015 San Diego, CA
- ASU Sustainability Series Events
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ